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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,130	06/21/2001	Thomas Muller	367.40252X00	4700
20457	7590	05/03/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			MEEK, JACOB M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

OK

<b>Office Action Summary</b>	<b>Application No.</b> 09/885,130	<b>Applicant(s)</b> MULLER ET AL.	
	<b>Examiner</b> Jacob Meek	<b>Art Unit</b> 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment filed December 21, 2004 has been entered.

### ***Drawings***

2. The corrected or substitute drawing figure 7 was received on December 21, 2004. This drawing is accepted.

### ***Specification***

3. The corrected or substitute abstract was received on December 21, 2004. This abstract is accepted.
4. The corrected or substitute specification was received on December 21, 2004. This specification is accepted.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Synchronization of Bluetooth Networks, or Synchronization of Piconets.

### ***Response to Arguments***

6. Applicant's arguments filed 21 December, 2004 have been fully considered but they are not persuasive.

With regard to claims 1, 16, and 34 – 40 Examiner acknowledges applicant's argument (page 17 – 18) with respect to the network configuration described by Smolentz as comprising additional elements, and that Figure 9 indeed represents BCCFP operation. Examiner points out that Figure 9 is not cited in the rejection of claim 1, nor is figure 10 or figure 11 as cited in arguments. Smolentz specifically describes his invention (BRFP, BPP)

as being used in a Bluetooth network, and further that transmitter transmits a real time clock value at an instance in time (see column 2, lines 44 – 60). Therefore, Examiner has interpreted the BRFP and BPP elements as fully functional Bluetooth units operating per Bluetooth specifications. It is acknowledged that while Smolentz defines a larger network view than an individual piconets, the overall network is compromised of individual Bluetooth piconets.

Examiner also acknowledges applicant's argument that instance is defined in disclosure, however, given the broadest interpretation of instance (a point in time between two states) real time clock transitions as defined in the Bluetooth specification are being interpreted as an instance for the purpose of examination. In this vein, Examiner also would like to point out that given that Bluetooth is explicitly disclosed as the standard that applicant's invention is based on, that Haartsen (previously cited NPL) discloses operation of synchronization and offsets are addressed (see page 111, Synchronization) in Bluetooth standards. Also, as noted in applicant's arguments (page 20), the means for transmitting synchronization in Bluetooth standards provide means for transmitting instances and in view of the fact that Smolentz's BRFPs and BPPs are defined as Bluetooth devices this functionality is inherent in view of Bluetooth functionality disclosed.

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., embodiments 1 & 2) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

8. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.
9. As to claims rejection of claims 1 – 40, previous rejections are listed below.

***Claim Rejections - 35 USC § 102***

10. Claims 1, 2, 6, 9, 13 - 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Smolentzov et al (US Patent 6,788,656).

With regard to Claim 1, Smolentzov teaches a method used with a transmitter (See Figure 14, 1401) with means for reading a real time clock (Figure 1, 1402); and means for transmitting the real time clock value (see Figure 14, 1403 and Column 12, lines 38 –50).

With regard to Claim 2, Smolentzov teaches a method used with transmitter for calculating the real time clock value at the first instance by adding the time difference between the first instance and the identified instance to the real time clock value at the identified instance to obtain the real time clock value for the first instance (see Figure 10 and Column 10, line 46 – Column 11, line 3).

With regard to Claim 6, Smolentzov teaches a method used with transmitter comprising a synchronization controller for maintaining the common time reference (see Figure 10, Column 11, lines 4 – 7).

With regard to claim 9, Smolentzov teaches the limitations of Claim 1 above, along with the use of the Bluetooth standard (Figure 1, Column 12, lines 38 – 50), and the use of a common time reference (See Figure 10, reference 1005).

With regard to claim 13, Smolentzov teaches the limitations of Claim 1 above along with an interface for connection to a Real Time Clock or Real Time application (see Column 12, lines 38 – 50).

With regard to Claim 14 Smolentzov teaches the limitations of Claim 1 above along with an arrangement for asynchronous transmission real clock time value and of the identification of the first instance (see Column 2, lines 44 – 60).

With regard to Claim 15 Smolentzov teaches the limitations of Claim 1 above along with the use of media devices (see Column 1, lines 21 – 26). Examiner interprets this list to include devices claimed by applicant.

***Claim Rejections - 35 USC § 103***

11. Claims 16, 17, 22, 31 – 35, and 37 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolentzov et al ('656).

With regard to claim 16, Smolentzov teaches a transmitter as described in Claim 1. Smolentzov fails to teach a receiver for the reception of this real time clock, and writing of the clock value, however Smolentzov states that it is required for the elements of the network to be time aligned (Column 2, line 66 – column 3, line 6, column 12, lines 15 – 31, and Figure 14, 1403). Therefore it would be required to have a receiver capable of processing the transmitted real time clock information to achieve synchronization in order to have an operable network.

With regard to claim 17, Smolentzov teaches a transmitter as described in Claim 2. Smolentzov fails to teach the details of the receiver necessary for the correction of this real time data. Smolentzov states that it is required for the elements of the network to be time aligned (Column 2, line 66 – column 3, line 6, column 12, lines 15 – 31, and Figure 14, 1403). Therefore it would be required to have a receiver capable of processing the transmitted information in order to have an operable network.

With regard to claim 22, Smolentzov teaches a transmitter described in Claim 6. Smolentzov fails to teach the details of the receiver containing a synchronization controller. Smolentzov does state that it required for the elements of the network to be time aligned (Column 2, line 66 – column 3, line 6, column 12, lines 15 – 31, and Figure 14, 1403). Therefore it would be required to have a receiver containing a synchronization controller in order to have an operable network.

With regard to Claim 31, Smolentzov teaches a transmitter described in Claim 13 above.

Smolentzov fails to teach the details of the receiver with an interface for connection to a Real Time Clock or Real Time application (see Column 12, lines 38 – 50). Smolentzov does state that it required for the elements of the network to be time aligned (Column 2, line 66 – column 3, line 6, column 12, lines 15 – 31, and Figure 14, 1403). Therefore it would be required to have a receiver containing this functionality in order to have an operable network.

With regard to Claim 32, Smolentzov teaches a transmitter described in Claim 14 above.

Smolentzov fails to teach the details of the receiver arrangement for asynchronous transmission real clock time value and of the identification of the first instance (see Column 2, lines 44 – 60). Smolentzov does state that it required for the elements of the network to be time aligned (Column 2, line 66 – column 3, line 6, column 12, lines 15 – 31, and Figure 14, 1403). Therefore it would be required to have a receiver containing this functionality in order to have an operable network.

With regard to Claim 33, Smolentzov teaches a transmitter described in Claim 15 above.

Smolentzov fails to teach the details of the receiver along with the use of media devices (see Column 1, lines 21 – 26). Examiner interprets this list to include devices claimed by applicant. It would have been obvious to incorporate a receiver in these devices to facilitate communications.

With regard to Claim 34, the limitations of the transceiver are taught in the combination of Claims 1 (transmitter) and 16 (receiver). This combination is taught by in Figure 1, references 101 and 103 that show two-way communications and examiner interprets to be a transceiver. Smolentzov does not describe a “distal” clock. Examiner notes that “Distal” is defined as “being away from point of attachment.” In applicant’s invention this would correspond to the transmitting entity (Master) distributing timing and is therefore considered to be the master clock.

With regard to Claim 35, the limitations of the transceiver are taught in Claim 2 (transmitter) and Claim 17 (receiver). This combination is taught by in Figure 1, references 101 and 103 that show two-way communications and examiner interprets to be a transceiver. Smolentzov does not describe a “distal” clock. Examiner notes that “Distal” is defined as “being away from point of attachment.” In

applicant's invention this would correspond to the transmitting entity (Master) distributing timing and is therefore considered to be the master clock.

With regard to Claim 37, the limitations and motivations as taught in claims 13 (transmitter) and 31 (receiver). The transceiver is taught in Figure 1, references 101 and 103 that show two-way communications and examiner interprets to be a transceiver.

With regard to Claim 38, this method is carried out on the transceiver described by claim 37 and incorporates the limitations of the above referenced claims.

With regard to Claim 39, this method is carried out on the transceiver as described in Claim 35.

With regard to Claim 40, this network would be formed by the transceivers as taught in claim 34 and therefore has been addressed by the discussion of Claim 34 above.

12. Claims 7, 8, 10 – 12, 23 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolentzov et al ('656) in view of Haartsen.

With regard to Claim 7, Smolentzov teaches the limitations of Claim 1 above and the use of the Bluetooth standard (Figure 1, Column 12, lines 38 – 50). Smolentzov fails to teach use of the Link Level synchronization for common time reference. Haartsen teaches the need for a Master node to provide synchronization messages (see page 110, 2<sup>nd</sup> paragraph (mid page)). It would have been obvious to one of ordinary skill of the art to utilize existing Bluetooth protocol functions to convey synchronizations messages as the use of clock offsets is well discussed in Bluetooth specifications.

With regard to Claim 8, Smolentzov teaches the limitations of Claim 1 above and the use of the Bluetooth standard. Smolentzov fails to teach use of the Link Manager message for identification of real time clock value and ID of first instance. Haartsen teaches the need for a Master node to provide synchronization messages (see page 110, 2<sup>nd</sup> paragraph (mid page)). It would have been obvious to one of ordinary skill of the art to utilize existing Bluetooth protocol functions to convey synchronizations messages.

With regard to Claim 10, Smolentzov teaches the limitations of Claim 1 above. Smolentzov fails to teach the instance being identified by a frame/slot number. Haartsen teaches that instances are identified using a frame and slot number (See page 108, Dynamic slot structure 1<sup>st</sup> paragraph and



page 109, Packet transmission). Because these are defined as part of the Bluetooth standard it would be inherent to incorporate this functionality into a transmitter for a Bluetooth application.

With regard to claim 11, see the limitations and motivations of Claim 10 above. Smolentzov fails to teach the instance being predetermined within a frame/slot. Haartsen teaches that slots and frames are assigned in a predetermined method as connections are established (See page 108, Dynamic slot structure 1<sup>st</sup> paragraph and page 109, Packet transmission).

With regard to claim 12, see the limitations and motivations of Claim 11 above. Smolentzov fails to teach the instance is determined by the transmission of a message. Haartsen teaches that slots and frames are assigned in a predetermined method as connections are established at a particular instance in time (See page 108, Dynamic slot structure 1<sup>st</sup> paragraph and page 109, Packet transmission).

With regard to claim 23, Smolentzov teaches the limitations of Claim 22. Smolentzov fails to teach the details of the synchronization controller with correlation means for identifying access codes preceding the payload of data packets. Haartsen teaches this as a fundamental part of the Bluetooth requirements (See Synchronization, 2<sup>nd</sup> paragraph, page 111). It would be inherent to have a receiver containing this function in order to have an operable network.

With regard to claim 24, Smolentzov teaches the limitations of Claim 23 above. Smolentzov fails to teach the updating of synchronization as packets are received. Haartsen teaches this as a fundamental part of the Bluetooth requirements (See Synchronization, 2<sup>nd</sup> paragraph, page 111). It would be inherent to have a receiver containing this function in order to have an operable network.

With regard to claim 25, Smolentzov teaches the limitations of Claim 22 above. Smolentzov fails to teach the synchronization controller providing bit level synchronization. Haartsen teaches this as a fundamental part of the Bluetooth requirements (See Synchronization, 2<sup>nd</sup> paragraph, page 111). The synchronization of the Slave's timing reference to the master's timing reference in a system operation in a serial bit stream makes the bit-level synchronization of this system and inherent property as the two clocks are locked to one another. It would be inherent to have a receiver containing this function in order to have an operable network.

With regard to Claim 26, Smolentzov and Haartsen teach the limitations and motivations for a transmitter in Claim 7 above. Smolentzov fails to teach the details of the receiver, however it would be required to have a receiver performing this operation in order to have an operable system. Motivation to combine described as above in Claim 22.

With regard to Claim 27, Smolentzov teaches the limitations of a transmitter in Claim 8 above. Smolentzov fails to teach the details of the receiver however it would be required to have a receiver performing this operation in order to have an operable system. Motivation to combine described as above in Claim 22.

With regard to Claim 28, the limitations of a transmitter are taught in Claim 10. It would be required to have a receiver capable of processing the transmitted slots/frames/instances in order to have an operable network.

With regard to Claim 29, the limitations of a transmitter are taught in Claim 11. It would be required to have a receiver capable of processing the transmitted slots/frames/instances in order to have an operable network.

With regard to Claim 30, the limitations of a transmitter are taught in Claim 12. It would be required to have a receiver capable of processing the transmitted slots/frames/instances in order to have an operable network.

13. Claims 3 - 5, 18 - 21, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolentzov et al ('656) in view of Geller et al (GB 2278519A).

With regard to Claim 3, the limitations of the transmitter as taught in Claim 1. Smolentzov does not discuss the first instance is in the past at the moment of transmission. Geller describes a mechanism for synchronizing the clock backward (see page 7, line 24 - page 8, line 2). It would have been obvious to one of ordinary skill in the art to combine Smolentzov's system with Geller's system to produce a system that would be capable of having high accuracy time synchronization (See Geller, abstract).

With regard to Claim 4, the limitations of the transmitter as taught in Claim 1. Smolentzov does not discuss the first instance is in the future at the moment of transmission. Geller describes a

mechanism for synchronizing the clock forward (see page 8, lines 3 – 13). Motivation to combine as taught in Claim 3 above.

With regard to Claim 5, limitations of Claim 1 as taught above. Smolentzov does not discuss the identified instance and first instance being simultaneous. Geller describes a mechanism for synchronizing the clock at a common instance (see page 8, lines 3 – 13). Motivation to combine as taught in Claim 3 above.

With regard to Claim 18, limitations and motivation as taught in claims 3 and 16 above.

With regard to Claim 19, limitations as taught in claim 16 above. Smolentzov fails to teach calculation of time difference. Geller teaches a method for calculating the clock value (see page 6, lines 20 – 37). Motivation to combine as taught in Claim 3 above.

With regard to Claim 20, limitations and motivation as taught in claims 5 and 16 above.

With regard to Claim 21, limitations as taught in claim 16 above. Smolentzov fails to teach determining time instance. Geller teaches a method for determining the clock value (see page 6, lines 20 – 37). Motivation to combine as taught in Claim 3 above.

With regard to Claim 36, limitations as taught in Claims 34 and 35, with the additional limitations as described in Claims 3 and 19. This combination is taught by in Figure 1, references 101 and 103 that show two-way communications and examiner interprets this to be a transceiver. Motivation to combine as discussed in referenced claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 41 – 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (US-6,574,266).

With regard to claim 41, Haartsen teaches a transmitter for transmitting in a Bluetooth system comprising a transmitter and at least one receiver (see column 5, lines 4 – 8), wherein transmitter is arranged to synchronize to a time reference having distinguishable instances, transmitter comprising: means for obtaining a clock value at an identified instance of the common time reference, and means for transmitting an identification of the an identification of a 1<sup>st</sup> instance of common time reference and an identification of a clock value that is valid at 1<sup>st</sup> instance of the common reference (see column 5, lines 8 – 14 where this is interpreted as equivalent). Haartsen is silent with respect to a low power frequency hopping network, but it would be obvious to one of ordinary skill in the art that the Bluetooth system could easy be described as a low-power frequency hopping network.

With regard to claim 42, Haartsen teaches a receiver for receiving in a Bluetooth system comprising at least receiver and a transmitter (see column 5, lines 4 – 8), wherein receiver is arranged to synchronize to a common time reference having distinguishable instances, receiver comprising: means for receiving a transmitted identification of a clock value and an identification at an instance of the common time reference, and means for determining a clock value valid at a 2<sup>nd</sup> instance of common time reference, from the received identification of a clock value and received identification of a 1<sup>st</sup> instance (see column 5, lines 8 – 23 where this is interpreted as equivalent). Haartsen is silent with respect to a low power frequency hopping network, but it would be obvious to one of ordinary skill in the art that the Bluetooth system could easy be described as a low-power frequency hopping network.

With regard to claims 43 and 44, the steps claimed as method are a restatement of the function of the apparatus of claims 41 and 42, and therefore would have been obvious and are similarly rejected.

#### ***Other Cited Prior Art***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Larsson (US-6,697,638), van der Tuijn (US-6,683,886), and Haartsen (US-6,519,460) all disclose Bluetooth communications systems and techniques.

#### ***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

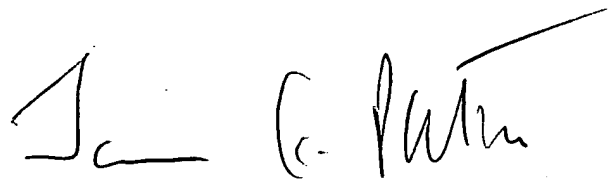
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM



JAY K. PATEL  
SUPERVISORY PATENT EXAMINER